DZENERGY

SOLAR CONTROLLER

CONTROLEUR DE CHARGE SOLAIRE
SOLAR LADEREGLER

DZ-ENERGY
CONTROLEUR DE CHARGE
10A 12/24V
NOTICE D'UTILISATION
(DZ-CC10A - 12/24V)

DZ-ENERGY
10A 12/24V
CHARGE CONTROLLER
USER MANUAL
(DZ-CC10A - 12/24V)

DZ-ENERGY
LADEKONTROLLER
10A 12/24V
BEDIENUNGSANLEITUNG
(DZ-CC10A - 12/24V)

- *avec interrupteur*
- *with switch*
- *mit on/off Schalter*

Version 05-2010-1

DROP ZONE ENERGY
www.dzenergy.com

10Amps

Thank you for choosing our solar charge controller.
These products are developed and manufactured to the latest technical standards, which represent the most innovative technology and the industry standard now.

IMPORTANT! Read the instructions before using this product.

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It is important to follow the manufacturer's safety procedures when working with batteries and other electrical equipment.

Under no circumstances connect the charge controller to a 220V domestic circuit. Contact our technical support if in doubt about how to make the connection.

To reduce the risk of electric sparks when installing DZ-ENERGY solar panels, use a thick cloth to cover the panels; thereby minimizing the electrical output of the panels. You can also install the panel in the evening when light conditions are reduced.

Be sure to make connections in a well ventilated area, free of flammable gases or vapors.

This controller is designed for battery configurations of 12 or 24 volts.

We recommend using a multimeter. It allows you to measure both voltage and amperage. Carefully check the polarity required to prevent short-circuiting.

When connecting, and to obtain proper performance and reduce power surges, always connect the charge controller to the battery first and then connect the solar panel(s).

Conversely, when you unplug the system, always disconnect the solar panel(s) first and the battery last.

Any reversal of polarity in the connections will, de-facto, invalidate the warranty on your solar panel.

ENGLISH

1/ Specifications

- 4 LED functionality.
- Easy to read, clear indication of charge status.
- Automatic temperature compensation.
- Automatic protection against reverse polarity on the batteries, solar panels and charge output (without fuse).
- Extensive Electronic Protection: short circuit, reverse polarity and overloading.
- Automatic reset.
- Automatic detection of battery voltage (12 / 24V).
- Security against low battery voltage (LVD).
- Easy to mount on wall or rail.
- Blocking of the return current.
- Load Selection (Gel battery and lead battery with liquid electrolyte).
- Type of use selection (charge verification or voltage verification).
- Voltage boost : 14.5 / 29 V (25 ° C), 2h.
- Power equalization : 14.8 / 29.6V (25 ° C), 2h.
- Float Voltage : 13.7 / 27.4 V (25 ° C).
- Low Voltage Disconnect function : 11.0 / 22.0 V controlled by voltage.
- Load reconnected : 12.8 / 25.6 V
- Temperature Compensation : -4 mV / cell * K.
- Max Load Current : 10A.
- Maximum cable size : 16mm^2.
- Internal Consumption : 4 mA.
- Ambient temperature range : -40 to +50 ° C.
- Case protection : IP 22 (Do not expose to moisture).
- Dimensions : 86 x 68 x 36mm.
- Weight : 145g.

2/ Product description

- The controller protects the battery against the risk of overloading and deep discharging.
- The charging characteristics involve multiple steps which include automatic adaptation to ambient temperature.
- The charge controller adjusts automatically to the system voltage 12V or 24V.
- The charge controller is equipped with security features and display.

3/ Installation and Connection

It is imperative that the charge regulator must be mounted away from moisture and direct sunlight. Under no circumstances should it be installed in damp rooms (for example: bathrooms).
The controller measures the temperature to adjust the load voltage. The battery and the regulator should be positioned in the same room and it should be placed close to the batteries - between 30 and 100 cm.
For outdoor use, protect the load controller from dust and water.

In operation, the controller undergoes an increase in temperature. It is therefore important to mount it on a non flammable surface.

Always be sure to connect the charge controller in a well ventilated space to avoid any risk of explosion during the connection (gas emanating of battery ...)

NOTE: Connect the controller by following the steps below to avoid installation errors.

Mount the controller on the wall with screws appropriate to the composition of the wall.
Make sure the fan openings on the sides are not obstructed.

Battery type
The default configuration of the controller is for a gel battery (VRLA). If you use a lead-acid battery, you will then need to adjust the controller functions. See the "Settings" section.

4/ Connections

4.1 Connecting the battery to the charge controller

NOTE: Follow the recommendations of your battery manufacturer. We strongly recommend you connect a fuse directly to the battery to prevent short-circuiting the battery wiring. The recommended fuse for the DZ-CC10DCL 12/24V is 30A.

Always connect the battery to the charge controller first, taking care to check the polarity. If you're not sure, consult an electrician.

Recommended cable diameters for the battery:
5A : 2.5 mm^2
8A : 4 mm^2
10A : 6 mm^2

Caution: if the battery polarity is reversed, the DC output load is also reversed. Never connect a device to a reversed DC load !

4.2 Connecting solar panel(s) to the charge controller

RNOTE: when the solar panels are exposed to sunlight, or other type of light, they immediately generate a current. Please follow the manufacturer's instructions for the solar panels.

Connect the solar panels to the charge controller and check that the polarity is correct.

Recommended cable diameters for the solar panel(s) :

5A : 2.5 mm²
8A : 4 mm²
10A : 6 mm²

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4.3 Connecting the DC load output to the charge controller

Connect the DC output load to the controller and check the polarity of the device to conserve power.

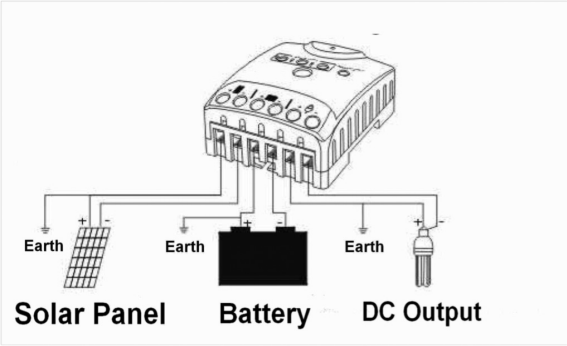
Recommended wire diameter:

5A : 2.5 mm²
8A : 4 mm²
10A : 6 mm²

4.4 Earthing the solar system

Inside the controller, all the positive polarities are connected together, so their potential power remains constant. If earthing is necessary, connect the positive polarity to the ground.

NOTE: If the device is used in a vehicle which has the negative terminal of the battery earthed to the chassis, loads connected to the controller should not have an electrical connection with the vehicle's body, otherwise the low voltage cut-off and the fused electronic controller functions will be short-circuited.



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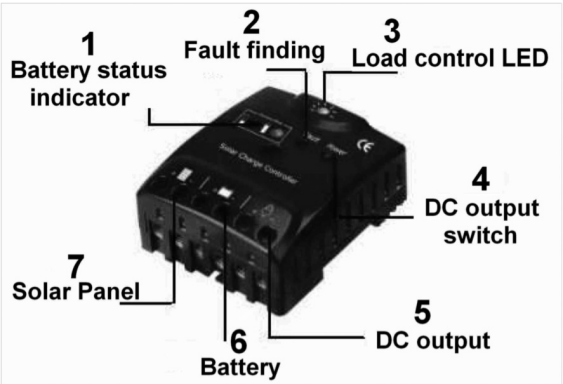
5/ Display and functions



1. Battery status indicator: 2 LEDs show the state of the battery's charge.
   First LED flashing: Battery capacity <25%.
   First LED on: battery capacity between 25% and 75%.
   Two LED lights: battery capacity >75%.
2. Fault finding: flashes when there is an open circuit, or if there is an overload or short circuit.
3. Load control LED: this LED illuminates when the battery is charging.
4. DC output switch: this switch turns the DC output on and off.
5. Connecting the 12V or 24V circuit (note the polarity "+" and "-").
6. Connecting the battery (note the polarity "+" and "-").
7. Connect the solar panel (check the polarity "+" and "-").

The charge controller starts a self test when it is properly connected to the battery and solar panel. After which the display resets to normal operation.
The controller automatically adjusts the voltage for 12V or 24V operation. When the voltage exceeds 20V (on the battery), the controller automatically switches to a 24V system.
If the battery voltage is not in the normal operating range (about 12V to 15.5V or 24V to 31V) at start-tup, the Fault LED lights.

6/ Low Voltage Disconnect (LVD)

The controller protects the battery against deep discharge.
If the battery voltage is below 11V the controller automatically shuts off the DC output.

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7/ Settings

WARNING : The controller should not be open when it is plugged in or running !
Always disconnect the solar panels and the battery before opening the charge controller.

The controller can be configured for a particular purpose.
- Change the battery type (lead-acid and Gel)

To do this, open the lid of the controller by removing the screws on the back.
When the controller is open, there are two jumpers on the board. The controller is factory set with the jumpers closed for GEL batteries.

To modify the settings, move the jumper on the connector pins.

To change, turn the jumper which is covering both pins to cover only one contact pin – see below.

Settings

jumper close for Gel batteries

jumper open for lead acid batteries

Factory setting : GEL
After completing the adjustment, replace the cover and tighten the screws.

8/ Recommended safety procedures and applications

Use

The charge controller is designed exclusively for use with 12V or 24V solar PV systems.

The controller will of course heat when in operation, but requires no maintenance except occasional dusting. Use a dry cloth to remove dust if necessary.

It is important to fully charge the batteries at least once a month. Otherwise, the batteries could be permanently damaged.

Product application

This charge controller is designed for use with 12V or 24V solar panels (depending on model) with a lead-acid battery electrolyte fluid or gel battery.

Never short-circuit the battery.

We recommend that you protect your battery with a fuse.

The batteries can release flammable gas. Watch for sparks when connecting the controller. Store batteries in a well ventilated area.

Do not touch or short circuit the connection terminals. Some connectors or terminals can carry twice the voltage of the batteries. To work with batteries, make sure you have dry hands and use insulated tools.

Keep children away from the battery and controller. Install products out of their reach.

9/ Disclaimer

The manufacturer shall not be liable for damages, especially to the battery, caused by use other than as specified or as mentioned in this manual or if the battery manufacturer's recommendations are neglected. The manufacturer shall not be held responsible for any maintenance or repair by unauthorized persons, misuse, improper installation and / or poor system design. This product has a warranty of two years from the date of original purchase. The warranty is limited to a service or a free replacement as determined by the manufacturer or distributor.

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10/ Guarantee

2 year guarantee

The guarantee runs from the purchase date, backed by authentic proof of purchase (with price and date). It is never extended by the exchange of the product. Any defective equipment returned under warranty must be sent to EQCM France BP 44, 22440 Ploufragan, France, postage paid. The customer must include his name and return address, his receipt and give the reasons for the return. Any item with postage still to be paid will be refused by us.

EQCM France aftersales will, at its discretion, repair or replace defective parts free of charge, or possibly send an equivalent product. The product will be returned, exchanged or repaired as appropriate, at the expense of EQCM France under the provisions of the guarantee and at the risk of the recipient.

The warranty does not include home repair and does not apply in the following circumstances :

- Non-compliance with the instructions for use, use of incorrect power, overvoltage, improper use or intensive use of the product, improper maintenance.
- Defects / damage due to improper handling, connection to an improper voltage, a power surge or abnormal environmental conditions (in particular: lightning, acid rain, pollution, storms, earthquakes, fires, floods, hail, etc.)
- Repairs carried out by a person not entitled to do so or change to the product by the user, by being dropped, batteries that have died, poor ventilation etc ....
- External corrosion resulting in discolouration or mold.
- Damage to persons or property due to improper installation, use or improper handling of the product.
- Damage due to water infiltration.
- Any cracks or impacts on the charge controller will void the warranty.
- Products purchased on E-BAY, in discount stores, in auctions or other types of non-commercial organisation are not recognised by DZ ENERGY.
- The warranty excludes any damages paid to the user.

The EQCM France warranty does not cover consumables such as batteries etc. It may be necessary to use these items and replace parts due to normal wear and tear. Replacing consumables is the customer's responsibility.

11/ Informations for consumers

➜ Keep the charge controller away from heat, water and damp places to avoid explosion, leakage and mold.
➜ Any strong shock is strongly prohibited and discouraged.
➜ Apart from technical professionals, no person is authorized to disassemble the solar charger without our permission in order to avoid any damage.

Always use a DZ-CC10A-12/24V charge controller when operating a panel or group of panels with greater than 10W output.

Neither the manufacturer, nor the supplier, can be held liable for the improper or incorrect use of this product and consequences of that misuse.

Any adjustment made by a person other than the supplier will invalidate the warranty.

This product is intended to be used only by people who read the manual.

The specifications of this product may change without notice.

This manual may not be reproduced in whole or in part without the prior written permission of the manufacturer.

12/ Regulatory standards

CE - STC - ROHS

DO NOT DISCARD THIS UNIT IN THE BIN. RETURN TO YOUR POINT OF SALE FOR RECYCLING.

READING THIS MANUAL IS NECESSARY FOR THE GOOD USE OF YOUR DZ-ENERGY SOLAR CHARGER. THIS MANUAL MUST BE KEPT IN A SAFE PLACE TO FOR FURTHER READING.

We draw the attention of users to the security and maintenance policies described throughout this manual and shown in the informative diagrams.

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